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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,533	09/24/2003	Jeffrey A. Lucas	207275.0697	4631

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EXAMINER

KEELER, KIMBERLY A

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/669,533

Applicant(s)

LUCAS ET AL.

Examiner

Kimberly Keeler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6, 7, 9, 10, 12-14, 16, 17, 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Miller et al. (U.S. Patent No. 5,275,743).

Independent claim 1 recites, “a multi-layer downstream filtration media support” (line 5) and “said multi-layer downstream pleat support” (line 14). It is unclear whether the support is intended to claim a “pleat” structure. Since the base claim 1 in other instances and its dependent claim fail to recite such a recitation, claim 1 has been examined based on the first cited reference above for the support structure.

Miller (743) teaches a filter element (10), comprising a filtration media (22), an upstream filtration media support (21) positioned upstream from and in contact with said filtration media (22) and a multi-layer downstream filtration media support (23,24) positioned downstream from said filtration media (22), said multi-layer downstream support (23,24) including a first downstream support layer (23) and a second downstream support layer (24), wherein: said first downstream support layer (23) is in contact with said filtration

media (22) and is interposed between said filtration media (22) and said second downstream layer (24). The first downstream support layer (23) is fabricated so as to minimize points of surface contact with said filtration media (22); and said second downstream support layer (24) is in contact with said first downstream support layer (23) and is fabricated so as to facilitate lateral fluid flow relative to said multi-layer downstream media support (23,24) as recited in claim 1. As to claim 2, Miller (743) discloses filter element wherein the filtration media is a pleated filtration media having a plurality of longitudinally extending pleats in column 8 lines 66-68. Miller (743) teaches the use of a pleated filtration media (column 2 lines 32-36) selected from the group consisting of radial pleats, w-pleats and spiral pleats (column 5 lines 28-31) as recited in claim 3. As to claim 4, Miller (743) describes a filter element as recited in Claim 1 in column 2 lines 58-64, wherein the filtration media is a microporous filtration membrane having a pore size of 10 microns or less. As to claim 6, Miller (743) describes, column 3 lines 58-63, the multi-layer downstream support consisting of said first downstream support layer and said second downstream support layer. Miller (743) also describes the first downstream support layer is fabricated from a nonwoven material in column 3 lines 61-63 as recited in claim 7. As to claim 9, Miller (743) states said nonwoven material is fabricated as a wetlaid material in column 2 line 17. Miller (743) also states said nonwoven material is fabricated from polyester in column 4 line 24, as recited in claim 10.

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As to claim 12, Miller (743) teaches a filter element (10), comprising a filtration media (22), an upstream pleat support (21) positioned upstream from and in contact with said filtration media (22) and a multi-layer downstream pleat support (23,24) positioned downstream from said filtration media (22), said multi-layer downstream support (23,24) including a first downstream support layer (23) and a second downstream support layer (24), wherein said first downstream support layer (23) is in contact with said filtration media (22) and is interposed between said filtration media (22) and said second downstream layer (24). The first downstream support layer (23) is fabricated so as to minimize points of surface contact with said filtration media (22); and said second downstream support layer (24) is in contact with said first downstream support layer (23) and is fabricated so as to facilitate lateral fluid flow relative to said multi-layer downstream pleat support (23,24).

As to claim 13, Miller (743) also teaches a filter cartridge comprising a filter element (10) having a longitudinal axis, an outer periphery and an inner periphery, and including a filtration media (22), an upstream filter media support (21) positioned upstream from and in contact with said filtration media (22); and a multi-layer downstream support (23,24) positioned downstream from said filtration media (22), said multi-layer downstream support (23,24) including a first downstream support layer (23) and a second downstream support layer (24), wherein the first downstream support layer (23) is in contact with said filtration media (22) and is interposed between said filtration media (22) and said second downstream layer (24), said first downstream support layer

(23) being fabricated so as to minimize points of surface contact with said filtration media (22). The second downstream support layer (24) is in contact with said first downstream support layer (23) and is fabricated so as to facilitate lateral fluid flow relative to said multi-layer downstream filter media support (23,24); a perforated cage (11) surrounding the outer periphery of the filter element; a perforated core (12) surrounded by the inner periphery of the filter element; and end caps (13,14) enclosing both ends of the perforated cage (11). Miller (743) also describes the first downstream support layer is fabricated from a nonwoven material in column 3 lines 61-63 as recited in claim 14. As to claim 16, Miller (743) states said nonwoven material is fabricated as a wetlaid material in column 2 line 17. Miller (743) also states said nonwoven material is fabricated from polyester in column 4 line 24, as recited in claim 17. As to claim 20, Miller (743) discloses in Figure 1 a perforated cage (11) is equipped with end caps (13,14) at both ends thereof. As to claim 21, Miller (743) discloses in Figure 1 said perforated core (12) is a cylindrical core and is coaxially positioned within the filter element, which is a cylindrical filter element, and the cage (11) is likewise cylindrical and is coaxially positioned about the cylindrical filter element.

As to claim 22, Miller (743) also teaches a filter cartridge comprising a filter element (10) having a longitudinal axis, an outer periphery and an inner periphery, and including a filtration media (22), an upstream filter pleat support (21) positioned upstream from and in contact with said filtration media (22); and a multi-layer downstream support (23,24) positioned downstream from said filtration media (22), said multi-layer downstream

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support (23,24) including a first downstream support layer (23) and a second downstream support layer (24), wherein the first downstream support layer (23) is in contact with said filtration media (22) and is interposed between said filtration media (22) and said second downstream layer (24), said first downstream support layer (23) being fabricated so as to minimize points of surface contact with said filtration media (22). The second downstream support layer (24) is in contact with said first downstream support layer (23) and is fabricated so as to facilitate lateral fluid flow relative to said multi-layer downstream filter pleat support (23,24); a perforated cage (11) surrounding the outer periphery of the filter element; a perforated core (12) surrounded by the inner periphery of the filter element; and end caps (13,14) enclosing both ends of the perforated cage (11).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (U.S. Patent No. 5,275,743) in view of Bayerlein et al. (U.S. Patent No. 6,153,098).

Miller (743) teaches a filter element (10), comprising a filtration media (22), an upstream filtration media support (21) positioned upstream from and in contact with said filtration media (22) and a multi-layer downstream filtration media support (23,24) positioned downstream from said filtration media (22), said multi-layer downstream support (23,24) including a first downstream support layer (23) and a second downstream support layer (24), wherein: said first downstream support layer (23) is in contact with said filtration media (22) and is interposed between said filtration media (22) and said second downstream layer (24). The first downstream support layer (23) is fabricated so as to minimize points of surface contact with said filtration media (22); and said second downstream support layer (24) is in contact with said first downstream support layer (23) and is fabricated so as to facilitate lateral fluid flow relative to said multi-layer downstream media support (23,24) as recited in claim 1.

Miller (743) does not teach that the filtration media is fabricated from a material selected from the group consisting of Teflon, nylon, polyaramide, polyvinylidene difluoride, polyether sulfone and combinations thereof.

However, Bayerlein (098) does teach that the filtration media can be fabricated from nylon or Teflon. It would have been obvious to one of ordinary skill in the art to fabricate the filtration media from nylon or Teflon as Bayerlein (098) teaches in column 8 lines 63-65.

Claims 8 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (U.S. Patent No. 5,275,743). Miller (743) teaches a resin binding composition to the filter medium as discussed in column 2 lines 52-54. Miller (743) teaches this resin binding composition as applied to a woven material; however, it would have been obvious to one of ordinary skill in the art to apply the resin binding to the matting and batting as described in claims 8 and 15 in order to enhance the structural strength of the material.

As to claim 18, it is unclear why this claim is dependent on claim 1, because claims 11 and 18 are each identifying identical matter and are both dependent on claim 1. For examination purposes claim 18 was examined as dependent on claim 13 as thought to be the original intent of the applicant.

Claims 11, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (U.S. Patent No. 5,275,743) in view of Pall (U.S. Patent No. 4,033,881). Miller (743) teaches a filter element (10), comprising a filtration media (22), an upstream filtration media support (21) positioned upstream from and in contact with said filtration

media (22) and a multi-layer downstream filtration media support (23,24) positioned downstream from said filtration media (22), said multi-layer downstream support (23,24) including a first downstream support layer (23) and a second downstream support layer (24), wherein: said first downstream support layer (23) is in contact with said filtration media (22) and is interposed between said filtration media (22) and said second downstream layer (24). The first downstream support layer (23) is fabricated so as to minimize points of surface contact with said filtration media (22); and said second downstream support layer (24) is in contact with said first downstream support layer (23) and is fabricated so as to facilitate lateral fluid flow relative to said multi-layer downstream media support (23,24) as recited in claim 1. As to claim 13, Miller (743) also teaches a filter cartridge comprising a filter element (10) having a longitudinal axis, an outer periphery and an inner periphery, and including a filtration media (22), an upstream filter media support (21) positioned upstream from and in contact with said filtration media (22); and a multi-layer downstream support (23,24) positioned downstream from said filtration media (22), said multi-layer downstream support (23,24) including a first downstream support layer (23) and a second downstream support layer (24), wherein the first downstream support layer (23) is in contact with said filtration media (22) and is interposed between said filtration media (22) and said second downstream layer (24), said first downstream support layer (23) being fabricated so as to minimize points of surface contact with said filtration media (22). The second downstream support layer (24) is in contact with said first downstream support layer (23) and is fabricated so as to facilitate lateral fluid flow relative to said multi-layer

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downstream filter media support (23,24); a perforated cage (11) surrounding the outer periphery of the filter element; a perforated core (12) surrounded by the inner periphery of the filter element; and end caps (13,14) enclosing both ends of the perforated cage (11).

Miller (743) is silent as to the second downstream support layer being an extruded apertured element. Miller (743) also does not teach the extruded layer having ribs formed on one side. However, Pall (881) does teach an extruded support layer (column 3 lines 63-66) and further teaches an extruded support layer with ribs (column 4 lines 12-14). Pall (881) states as follows "external and interior supports can be made of metal or plastic, and can be, for example, in the form of perforated sheets or plates, or woven or nonwoven or extruded netting, made of plastic filaments or extrusions". It would have been obvious to one of ordinary skill to manufacture the support layer in an extruded fashion because Pall discloses several options regarding the manufacture of the second support layer including plastic, nonwoven, woven, and extruded.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly Keeler whose telephone number is 571-272-2460. The examiner can normally be reached on Monday-Friday 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kak
10/1/04


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